

IN THE CLAIMS:

1. (Previously Presented) A semiconductor device comprising a driver circuit and a pixel section over a substrate, wherein:
 - a) said driver circuit includes:
 - a first thin film transistor comprising:
 - a channel forming region and a third impurity region having n-type conductivity, wherein the channel forming region and the third impurity region are overlapped with a gate electrode; and
 - a first impurity region having the n-type conductivity which forms a source region or a drain region, wherein the first impurity region is not overlapped with the gate electrode; and
 - a fifth thin film transistor comprising:
 - a channel forming region and a fifth impurity region having p-type conductivity which forms a source region or a drain region; and
 - b) said pixel section comprises:
 - a fourth thin film transistor comprising:
 - a channel forming region overlapped with a gate electrode; and
 - a fourth impurity region having the n-type conductivity and a first impurity region having the n-type conductivity which forms a source region or a drain region, wherein the first impurity region and the fourth impurity region are not overlapped with the gate electrode,
 - wherein an impurity element having the n-type conductivity is included in the third impurity region and in the fourth impurity region and a concentration of the impurity element included in said fourth impurity region is less than a concentration of the impurity element included in said third impurity region.
2. (Cancelled).
3. (Original) A semiconductor device according to claim 1, wherein:
 - said pixel section comprises:
 - a light shielding film formed on said fourth thin film transistor interposing an insulating layer therebetween;
 - a pixel electrode connected to said fourth thin film transistor; and

a storage capacitor comprising said light shielding film, said insulating layer contacting said light shielding film, and the pixel electrode contacting the insulating layer, wherein said storage capacitor is connected to said fourth thin film transistor.

4. (Original) A semiconductor device according to claim 3, wherein:
said light shielding film comprises an element selected from a group consisting of aluminum, tantalum, and titanium; and
said insulating layer comprises an oxide of said element of the light shielding film.

5. (Original) A semiconductor device according to claim 3, wherein said insulating layer comprises a material selected from silicon nitride, silicon oxide, oxidized silicon nitride, diamond-like carbon (DLC), and polyimide.

6. (Original) A semiconductor device according to claim 3, wherein:
said insulating layer comprises an inorganic insulating film and an organic insulating film; and
said light shielding film is formed contacting the organic insulating film.

7. (Original) A semiconductor device according to claim 3, wherein:
said insulating layer comprises an inorganic insulating film and an organic insulating film; and
said light shielding film is formed contacting the inorganic insulating film.

8. (Original) A semiconductor device according to claim 1 wherein said semiconductor device is one selected from a group consisting of: a portable telephone, a video camera, a mobile computer, a head mount display, a projector, a portable book, a digital camera, a car navigation system, and a personal computer.

9. (Previously Presented) A semiconductor device comprising a driver circuit and a pixel section over a substrate, wherein:
a) said driver circuit comprises:

a first thin film transistor comprising:

 a channel forming region and a third impurity region having n-type conductivity, wherein the channel forming region and the third impurity region are overlapped with a gate electrode; and

 a first impurity region having the n-type conductivity which forms a source region or a drain region, wherein the first impurity region is not overlapped with the gate electrode;

 a second thin film transistor comprising:

 a channel forming region and a third impurity region having the n-type conductivity, wherein the channel forming region and the third impurity region are overlapped with a gate electrode; and

 a second impurity region having the n-type conductivity and a first impurity region having the n-type conductivity which forms a source region or a drain region, wherein the first impurity region and the second impurity region are not overlapped with the gate electrode; and

 a fifth thin film transistor comprising:

 a channel forming region and a fifth impurity region having p-type conductivity which forms a source region or a drain region; and

b) said pixel section comprises:

 a fourth thin film transistor having:

 a channel forming region overlapped with a gate electrode; and

 a fourth impurity region having the n-type conductivity and a first impurity region having the n-type conductivity which forms a source region or a drain region, wherein the first impurity region and the fourth impurity region are not overlapped with the gate electrode.

10. (Cancelled).

11. (Previously Presented) A semiconductor device according to claim 9, wherein:

 an impurity element having the n-type conductivity is included in the second impurity region and in the third impurity region; and

a concentration of the impurity element included in said second impurity region is the same as a concentration of the impurity element included in said third impurity region.

12. (Original) A semiconductor device according to claim 9, wherein said pixel section further comprises:

a light shielding film formed on said fourth thin film transistor interposing an insulating layer therebetween;

a pixel electrode connected to said fourth thin film transistor; and

a storage capacitor comprising said light shielding film, said insulating layer contacting said light shielding film, and the pixel electrode contacting the insulating layer, wherein said storage capacitor is connected to said fourth thin film transistor.

13. (Original) A semiconductor device according to claim 12, wherein:

said light shielding film comprises an element selected from a group consisting of aluminum, tantalum, and titanium; and

said insulating layer comprises an oxide of said element of the light shielding film.

14. (Original) A semiconductor device according to claim 12, wherein said insulating layer comprises a material selected from silicon nitride, silicon oxide, oxidized silicon nitride, diamond-like carbon (DLC), and polyimide.

15. (Original) A semiconductor device according to claim 12, wherein:

said insulating layer comprises an inorganic insulating film and an organic insulating film; and

said light shielding film is formed contacting the organic insulating film.

16. (Original) A semiconductor device according to claim 12, wherein:

said insulating layer comprises an inorganic insulating film and an organic insulating film; and

said light shielding film is formed contacting the inorganic insulating film.

17. (Original) A semiconductor device according to claim 9 wherein said semiconductor device is one selected from a group consisting of: a portable telephone, a video camera, a mobile computer, a head mount display, a projector, a portable book, a digital camera, a car navigation system, and a personal computer.

18.-26. (Cancelled).

27. (Previously Presented) A semiconductor device comprising a driver circuit and a pixel section over a substrate, wherein:

a) said driver circuit comprises:

a first thin film transistor comprising:

a channel forming region and a third impurity region having n-type conductivity, wherein the channel forming region and the third impurity region are overlapped with a gate electrode; and

a first impurity region having the n-type conductivity which forms a source region or a drain region wherein the first impurity region is not overlapped with the gate electrode;

wherein said first thin film transistor constitutes a shift register circuit, and

a second thin film transistor comprising:

a channel forming region and the third impurity region having the n-type conductivity, wherein the channel forming region and the third impurity region are overlapped with a gate electrode; and

a second impurity region having the n-type conductivity and a first impurity region having the n-type conductivity which forms a source region or a drain region, wherein the first impurity region and the second impurity region are not overlapped with the gate electrode;

wherein said second thin film transistor constitutes a sampling circuit, and

b) said pixel section comprises:

a fourth thin film transistor comprising:

a channel forming region overlapped with a gate electrode; and

a fourth impurity region having the n-type conductivity and a first impurity region having the n-type conductivity which forms a source region or a drain region, wherein the

first impurity region and the fourth impurity region are not overlapped with the gate electrode.

28. (Original) A semiconductor device according to claim 27, wherein:
an impurity element having said conductivity type is included in the third impurity region and in the fourth impurity region; and
a concentration of the impurity element included in said fourth impurity region is less than a concentration of the impurity element included in said third impurity region.

29. (Original) A semiconductor device according to claim 27, wherein:
an impurity element having said conductivity type is included in the second impurity region and in the third impurity region; and
a concentration of the impurity element included in said second impurity region is the same as a concentration of the impurity element included in said third impurity region.

30. (Original) A semiconductor device according to claim 27, wherein said pixel section further comprises:
a light shielding film formed on said fourth thin film transistor interposing an insulating layer therebetween;
a pixel electrode connected to said fourth thin film transistor; and
a storage capacitor comprising said light shielding film, said insulating layer contacting said light shielding film, and the pixel electrode contacting the insulating layer,
wherein said storage capacitor is connected to said fourth thin film transistor.

31. (Original) A semiconductor device according to claim 30, wherein:
said light shielding film comprises an element selected from a group consisting of aluminum, tantalum, and titanium; and
said insulating layer comprises an oxide of said element of the light shielding film.

32. (Original) A semiconductor device according to claim 30, wherein said insulating layer comprises a material selected from silicon nitride, silicon oxide, oxidized silicon nitride, diamond-like carbon (DLC), and polyimide.

33. (Original) A semiconductor device according to claim 30, wherein:
said insulating layer comprises an inorganic insulating film and an organic insulating film; and
said light shielding film is formed contacting the organic insulating film.

34. (Original) A semiconductor device according to claim 30, wherein:
said insulating layer comprises an inorganic insulating film and an organic insulating film; and
said light shielding film is formed contacting the inorganic insulating film.

35. (Original) A semiconductor device according to claim 27 wherein said semiconductor device is one selected from a group consisting of: a portable telephone, a video camera, a mobile computer, a head mount display, a projector, a portable book, a digital camera, a car navigation system, and a personal computer.

36. (Previously Presented) A semiconductor device having a panel comprising a pixel section and a driver circuit formed over a substrate, wherein:

a) said pixel section comprises a thin film transistor comprising:
a semiconductor layer formed over an insulating surface of said substrate;
a gate insulating film on said semiconductor layer and a gate electrode over said gate insulating film;
a channel forming region formed in said semiconductor layer;
a source region and a drain region formed in said semiconductor layer; and
a lightly doped drain (LDD) region, formed in said semiconductor layer so as not to be overlapped with said gate electrode, and
b) said driver circuit comprises:
a first thin film transistor comprising:

a first semiconductor layer formed over an insulating surface of said substrate;
a gate insulating film on said first semiconductor layer and a first gate electrode over said gate insulating film;
a first channel forming region formed in said semiconductor layer;
a first source region and a first drain region formed in said first semiconductor layer;
and
a first lightly doped drain (LDD) region, formed in said first semiconductor layer so as to be overlapped with said first gate electrode, and
a second thin film transistor comprising:
a second semiconductor layer formed over an insulating surface of said substrate;
a gate insulating film on said second semiconductor layer and a second gate electrode over said gate insulating film;
a second channel forming region formed in said second semiconductor layer;
a second source region and a second drain region formed in said second semiconductor layer; and
a second lightly doped drain (LDD) region, formed in said second semiconductor layer so as to be partially overlapped with said second gate electrode.

37. (Original) A semiconductor device according to claim 36, wherein:
an impurity element having said conductivity type is included in the third impurity region and in the fourth impurity region; and
a concentration of the impurity element included in said fourth impurity region is less than a concentration of the impurity element included in said third impurity region.

38. (Original) A semiconductor device according to claim 36, wherein:
an impurity element having said conductivity type is included in the second impurity region and in the third impurity region; and
a concentration of the impurity element included in said second impurity region is the same as a concentration of the impurity element included in said third impurity region.

39. (Original) A semiconductor device according to claim 36, wherein said pixel section further comprises:

a light shielding film formed on said fourth thin film transistor interposing an insulating layer therebetween;

a pixel electrode connected to said fourth thin film transistor; and

a storage capacitor comprising said light shielding film, said insulating layer contacting said light shielding film, and the pixel electrode contacting the insulating layer,

wherein said storage capacitor is connected to said fourth thin film transistor.

40. (Original) A semiconductor device according to claim 39, wherein:

said light shielding film comprises an element selected from a group consisting of aluminum, tantalum, and titanium; and

said insulating layer comprises an oxide of said element of the light shielding film.

41. (Original) A semiconductor device according to claim 39, wherein said insulating layer comprises a material selected from silicon nitride, silicon oxide, oxidized silicon nitride, diamond-like carbon (DLC), and polyimide.

42. (Original) A semiconductor device according to claim 39, wherein:

said insulating layer comprises an inorganic insulating film and an organic insulating film; and

said light shielding film is formed contacting the organic insulating film.

43. (Original) A semiconductor device according to claim 39, wherein:

said insulating layer comprises an inorganic insulating film and an organic insulating film; and

said light shielding film is formed contacting the inorganic insulating film.

44. (Original) A semiconductor device according to claim 39 wherein said semiconductor device is one selected from a group consisting of: a portable telephone, a

video camera, a mobile computer, a head mount display, a projector, a portable book, a digital camera, a car navigation system, and a personal computer.

45.-80. (Cancelled).

81. (Original) A semiconductor device according to claim 1 wherein said semiconductor device comprises an electro-luminescence display panel.

82. (Original) A semiconductor device according to claim 9 wherein said semiconductor device comprises an electro-luminescence display panel.

83. (Cancelled).

84. (Original) A semiconductor device according to claim 27 wherein said semiconductor device comprises an electro-luminescence display panel.

85. (Original) A semiconductor device according to claim 36 wherein said semiconductor device comprises an electro-luminescence display panel.